S.NO	NAME OF THE PROGRAMME	NAME O F THE SUBJECT	COURSE OUTCOMES	
1	I Pharm. D	**Human Anatomy & Physiology**	CO 1	Describe the structure (gross and histology) and functions of various organs of the human body;
			CO 2	Describe the various homeostatic mechanisms and the ir imbalances of various systems;
			CO 3	Identify the various tissues and organs of the different systems of the human body;
			CO 4	Perform the hematological tests and also record blood pressure, heart rate, pulse and Respiratory volumes;
			CO 5	Appreciate coordinated working pattern of different organs of each system; and
			CO 6	Appreciate the interlinked mechanisms in the maintenance of normal functioning (homeostasis) of human body
2		**pharmaceutics**	CO 1	know the formulation aspects of different dosage forms;
			CO 2	do different pharmaceutical caluculati on involved in formulation;
			CO 3	formulate different types of dosage forms; and appreciate the importance of good formulation for effectiveness.
3		**Medicinal Biochemistry**	CO 1	Understand the catalytic activity of enzymes and importance of isoenzymes in diagnosis of diseases;
			CO 2	Know the metabolic process of biomolecules in health and illness (metabolic disorders);
			CO 3	Understand the genetic organization of mammalian genome; protein synthesis;

				replication; mutation and repair mechanism;
			CO 4	Know the biochemical principles of organ function tests of kidney, liver and endocrine gland; and
			CO 5	Do the qualitative analysis and determination of biomolecules in the body fluids.
4		**Pharmaceutical Organic Chemistry**	CO 1	IUPAC/Common system of nomenclature of simple organic compounds belonging to different classes of organic compounds;
			CO 2	Important physical properties of organic compounds;
			CO 3	Free radical/ nucleophyllic [alkyl/ acyl/ aryl] /electrophyllic substitution, free radical/ nucleophyllic / electrophyllic addition, elimination, oxidation andreduction reactions with mechanism, orientation of the reaction, order of reactivity, stability of compounds.
			CO 4	Some named organic reactions with mechanisms;
			CO 5	Methods of preparation, test for purity, principle involved in the assay, important medicinal uses of some important organic compounds.
5		**Pharmaceutical Inorganic Chemistry**	CO 1	Understand the principles and procedures of analysis of drugs and also regarding the application of inorganic pharmaceuticals;
			CO 2	Know the analysis of the inorganic pharmaceuticals their applications; and

			CO 3	Appreciate the importance of inorganic pharmaceuticals in preventing and curing the disease.
6		**Remedial Mathematics/Biology**	CO 1	Know trignometry, analytical geometry, matrices, determinant, integration, differential equation, laplace transform and their applications;
			CO 2	Solve the problems of different types by applying theory; and
			CO 3	Appreciate the important applications of mathematics in pharmacy.
1	II Pharm. D	**Pathophysiology**	CO 1	Describe the etiology and pathogenesis of the selected disease states;
			CO 2	Name the signs and symptoms of the diseases.
			CO 3	Mention the complications of the diseases.
2		**Pharmaceutical Microbiology**	CO 1	Know the anatomy, identification, growth factors and sterilization of microorganisms;
			CO 2	Know the mode of transmission of disease causing microorganism, symptoms of disease, and treatment aspect;
			CO 3	Do estimation of RNA and DNA and there by identifying the source.
			CO 4	Do cultivation and identification of the microorganisms in the laboratory;
			CO 5	Do identification of diseases by performing the diagnostic tests; and
			CO 6	Appreciate the behavior of motility and behavioral characteristics of microorganisms.

3		**Pharmacognosy & Phytopharmaceuticals**	CO 1	Understand the basic principles of cultivation, collection and storage of crude drugs;
			CO 2	Know the source, active constituents and uses of crude drugs.
			CO 3	Appreciate the applications of primary and secondary metabolites of the plant.
4		**Pharmacology – I**	CO 1	Understand the pharmacological aspects of drugs falling under the above mentioned chapters;
			CO 2	Handle and carry out the animal experiments;
			CO 3	Appreciate the importance of pharmacology subject as a basis of therapeutics; and
			CO 4	Correlate and apply the knowledge therapeutically.
5		**Community Pharmacy**	CO 1	Know pharmaceutical care services;
			CO 2	Know the business and professional practice management skills in community pharmacies;
			CO 3	Do patient counseling & provide health screening services to public in community pharmacy;
			CO 4	Respond to minor ailments and provide appropriate medication;
			CO 5	Show empathy and sympathy to patients.
			CO 6	Appreciate the concept of rational drug therapy.
6		**Pharmacotherapeutics - I**	CO 1	The pathophysiology of selected disease states and the rationale for drug therapy;

			CO 2	The therapeutic approach to management of these diseases;
			CO 3	The controversies in drug therapy;
			CO 4	The importance of preparation of individualised therapeutic plans based on diagnosis;
			CO 5	Needs to identify the patient-specific parameters relevant in initiating drug therapy,and monitoring therapy (including alternatives, time-course of clinical and laboratory indices of therapeutic response and adverse effects);
			CO 6	Describe the pathophysiology of selected disease states and explain the rationale for drug therapy;
			CO 7	Summarise the therapeutic approach to management of these diseases including reference to the latest available evidence;
			CO 8	Discuss the controversies in drug therapy;
			CO 9	Discuss the preparation of individualised therapeutic plans based on diagnosis; and
			CO 10	Identify the patient-specific parameters relevant in initiating drug therapy, and monitoring therapy (including alternatives, time-course of clinical and laboratory indices of therapeutic response and adverse effects).
1	III Pharm. D	**Pharmacology – II**	CO 1	Understand the pharmacological aspects of drugs falling under the above mentioned chapters,
			CO 2	Carry out the animal experiments confidently,

			CO 3	Appreciate the importance of pharmacology subject as a basis of therapeutics, and
			CO 4	Correlate and apply the knowledge therapeutically.
2		**Pharmaceutical Analysis**	CO 1	To aquire adequate analytical knowledge regarding basic principles.
			CO 2	To Provide an opportunity for the students to learn about the analytical techniques.
3		**Pharmacotherapeutics – II**	CO 1	Know the pathophysiology of selected disease states and the rationale for drug therapy
			CO 2	Know the therapeutic approach to management of these diseases;
			CO 3	Know the controversies in drug therapy;
			CO 4	Know the importance of preparation of individualised therapeutic plans based on diagnosis.
			CO 5	Appreciate the needs to identify the patient-specific parameters relevant in initiating drug therapy, and monitoring therapy (including alternatives, time-course of clinical and laboratory indices of therapeutic response and adverse effects).
4		**Pharmaceutical Jurisprudence**	CO 1	Practice the professional ethics;
			CO 2	Understand the various concepts of the pharmaceutical legislation in india.
			CO 3	Know the various parameters in the drug and cosmetic act and rules

			CO 4	Know the drug policy, dpco, patent and design act;
			CO 5	Understand the labeling requirements and packaging guidelines for drugs and cosmetics;
			CO 6	Be able to understand the concepts of dangerous drugs act, pharmacy act and excise duties act; and
			CO 7	Other laws as prescribed by the pharmacy council of india from time to time including international laws.
5		**Medicinal Chemistry**	CO 1	To understand different modern techniques and computational tools of drug design.
			CO 2	To understand the relation of structure and activity of same important drug classes.
			CO 3	To gain knowledge about antibiotics for microbial diseases, chemotherapy of cancer and different anti-viral agents.
			CO 4	To get introduced to chemistry of variety of drug classes responsible for their pharmacological properties.
6		**Pharmaceutical Formulations**	CO 1	Understand the principle involved in formulation of various pharmaceutical dosage forms;
			CO 2	Prepare various pharmaceutical formulation;
			CO 3	Perform evaluation of pharmaceutical dosage forms; and
			CO 4	Understand and appreciate the concept of bioavailability and bioequivalence, their role in clinical situations.

1	IV Pharm. D & I Pharm. D (PB)	**Pharmacotherapeutics – III**	CO 1	the pathophysiology of selected disease states and the rationale for drug therapy;
			CO 2	the therapeutic approach to management of these diseases;
			CO 3	the controversies in drug therapy;
			CO 4	the importance of preparation of individualised therapeutic plans based on diagnosis;
			CO 5	needs to identify the patient-specific parameters relevant in initiating drug therapy,
			CO 6	and monitoring therapy (including alternatives, time-course of clinical and laboratory indices of therapeutic response and adverse effects);
			CO 7	describe the pathophysiology of selected disease states and explain the rationale for drug therapy;
			CO 8	to summarize the therapeutic approach to management of these diseases including reference to the latest available evidence;
			CO 9	to discuss the controversies in drug therapy;
			CO 10	to discuss the preparation of individualised therapeutic plans based on diagnosis; and
2		**Hospital Pharmacy**	CO 1	Know various drug distribution methods;
			CO 2	Know the professional practice management skills in hospital pharmacies;
			CO 3	Provide unbiased drug information to the doctors;

			CO 4	Know the manufacturing practices of various formulations in hospital set up;
			CO 5	Appreciate the practice based research methods; and
			CO 6	Appreciate the stores management and inventory control.
3		**Clinical Pharmacy**	CO 1	Monitor drug therapy of patient through medication chart review and clinical review;
			CO 2	Obtain medication history interview and counsel the patients;
			CO 3	Identify and resolve drug related problems;
			CO 4	Detect, assess and monitor adverse drug reaction;
			CO 5	Interpret selected laboratory results (as monitoring parameters in therapeutics) of specific disease states; and
			CO 6	Retrieve, analyze, interpret and formulate drug or medicine information.
4		**Biostatistics And Research Methodology**	CO 1	Know various statistical methods to solve different types of problems.
			CO 2	Operate various statistical software packages.
			CO 3	Appreciate the importance of computer in hospital and community pharmacy.
			CO 4	Appreciate the statistical technique in solving the pharmaceutical problems.
5		**Biopharmaceutics And Pharmacokinetics**	CO 1	Drug absorption, distribution, metabolism, and elimination processes.

			CO 2	Concept of compartment models and its application in determination of various pharmacokinetic parameters.
			CO 3	Basis for conduction of in vivo bioavailability & bio equivalence studies before a drug product launch in to the market.
6		**Clinical Toxicology**	CO 1	Develop and apply understanding of general toxicology principles and clinical management practice.
			CO 2	Develop and understand history, assessment and therapy consideration associated with management of toxic exposure.
			CO 3	Develop the ability to manage poisoning cases according to treatment guidelines for specific toxic substances.
			CO 4	Achievement of an ability to function in a professional capacity that is appropriate and functional when encounters a toxic exposure.
1	I Pharm. D (PB)	**Pharmacotherapeutics I & II**	CO 1	The pathophysiology of selected disease states and the rationale for drug therapy;
			CO 2	The therapeutic approach to management of these diseases.
			CO 3	The controversies in drug therapy.
			CO 4	The importance of preparation of individualized therapeutic plans based on diagnosis.
			CO 5	Needs to identify the patient-specific parameters relevant in initiating drug therapy, and monitoring therapy (including alternatives, time-course of clinical and laboratory indices of

				therapeutic response and adverse effects);
			CO 6	Describe the pathophysiology of selected disease states and explain the rationale for drug therapy;
			CO 7	To summarize the therapeutic approach to management of these diseases including reference to the latest available evidence;
			CO 8	To discuss the controversies in drug therapy;
			CO 9	To discuss the preparation of individualised therapeutic plans based on diagnosis; and
1	V Pharm. D & II Pharm. D (PB)	**Clinical Research**	CO 1	Know the new drug development process.
			CO 2	Appreciate and conduct the clinical Pharm.D.- Fifth Year trials activities
			CO 3	Know safety monitoring and reporting in clinical trials
			CO 4	Manage the trial coordination process
			CO 5	Understand the regulatory and ethical requirements.
2		**Pharmacoepidemiology And Pharmacoeconomics**	CO 1	To know the various methods used in Pharmacoepidemiology
			CO 2	Demonstrate competency in the design, conduct and evaluation of Pharmacoepidemiology studies.
			CO 3	To know the basics concepts and understand various methods used in Pharmacoeconomic analysis.

			CO 4	Demonstrate competency in the design, conduct and evaluation of Pharmacoeconomic studies.
3		**Clinical Pharmacokinetics And Pharmacotherapeutic Drug Monitoring**	CO 1	Basic knowledge of clinical pharmacokinetics and its applications.
			CO 2	Therapeutic drug monitoring and safety pharmacology in patients.
			CO 3	Applied knowledge of population pharmacokinetics in patients.